CASE REPORT

Management of Mucous Extravasation Cyst: A Report of Two Cases

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Abstract

Mucocele is the most common oral lesion of the minor salivary glands in children and young adults. An 8-year-old male child and a 9-year-old female child presented to our department with a chief complaint of swelling in the inner aspect of the lower lip. On clinical examination, the swelling was fluctuant. Excisional biopsy of the lesion was performed. Histopathological reports confirmed the diagnosis of mucocele. Good prognosis was observed at follow-up.

Keywords: Extravasation, Minor salivary glands, Oral mucocele, Retention cyst.

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Introduction

Mucocele is one of the most common benign soft tissue lesions present in the oral cavity.[1] The word "muco" means mucus and "coele" is cavity, hence these are mucus-filled cavities. Mucus is exclusively secreted by minor salivary glands and sublingual salivary glands. It is also found in paranasal sinuses, lacrimal sacs, and appendix or gall bladder.[2,3]

Mucocele is of two types namely: extravasation and retention type. In children, extravasation mucoceles are more common than the retention type of mucoceles. Retention type of mucocele is very rarely found.[4] Extravasation mucocele results from a broken salivary gland duct causing spillage into the soft tissues around the gland.[5]

Clinically no differences are found between extravasation and retention types. The clinical appearance of mucocele is soft, bluish, and transparent cystic swelling. Due to cyanosis of the tissues above; vascular congestion and accumulation of fluid below swelling appear blue in color. However, color may vary depending on the size of the lesion, elasticity of the overlying tissue, and proximity to the surface. Extravasation type of mucocele is commonly seen on the lower lip followed by the buccal mucosa, tongue, and palate and is rarely found in the posterior dorsal area of the tongue and retromolar region.[6,7]

Mucoceles are asymptomatic in nature but can interfere with speech, chewing, or swallowing that can cause discomfort to the patient. Mucocele can be treated through various treatment modalities, surgical excision, micromarsupialization, marsupialization, cryosurgery, laser vaporization, and laser excision.[8]

This article describes a case series of mucocele on the lower lip treated by surgical excision method using scalpel blade.

Case 1

An eight-year-old boy with no notable medical history presented to the Department of Pediatric and Preventive Dentistry with the chief complaint of painless swelling on the inner aspect of the lower lip since 3 weeks. The swelling was small initially and then was increasing gradually to attain the present size associated with discomfort during chewing food.

The intraoral examination showed that the patient was undergoing a transitional period of mixed dentition. A round fluctuant swelling was seen on the inner aspect of the lower lip at the right central incisor region measuring 8 mm in diameter. The swelling was just below the vermilion border of the lower lip and extending inferiorly toward the vestibule. The color of the swelling was the same as that of the adjacent mucosa (Fig. 1). No other oral anomalies were detected. The patient had a positive history of lip-biting habit. Intraoral examination revealed dental caries with respect to 51, 52, 61, 53, and 63.

Based on the clinical features, the lesion was provisionally diagnosed as a mucocele. The blood investigations were done, which included bleeding and clotting time. After all investigations came normal, the patient was recalled for excision of the lesion. Before excising the lesion with scalpel, the lesion was sterilized with 5% povidone-iodine solution, and Precaine topical anesthetic gel (20% benzocaine) was applied for 2 minutes prior to infiltration. Local infiltration was given around the lesion (Lignox 2% a lignocaine with epinephrine 1:80,000).

An elliptical incision was made around the lesion to obtain a proper biopsy sample (Fig. 2). Excisional biopsy was performed with the overlying associated mucosa and the glandular tissue

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down to the muscle layer. Coagulation was achieved after the removal of the lesion. The wound was approximated with 3-0 silk sutures (Fig. 3). The postoperative course was uneventful (Fig. 4). The excised tissue was immediately fixed in 10% formalin and sent for histopathological examination.

Histological Report

Microscopic examination revealed a soft-tissue lesion covered by an atrophic parakeratotic stratified squamous epithelium with the underlying connective tissue showing mucin spillage walled by granulation tissue response and chronic inflammatory infiltration comprising of lymphocytes, plasma cells, and mucinophages. Deeper connective tissue showed a minor salivary gland. The histologic diagnosis confirmed the initial diagnosis of mucocele (extravasation type) (Fig. 5).

Case 2

An eight-year-old female with no notable medical history presented to the Department of Pediatric and Preventive Dentistry with the chief complaint of a swelling on the inner aspect of the lower lip since past 5 months. Swelling was initially small and then was increasing gradually to attain the present size. The child's parents also gave a history of lip-biting and cheek-biting habit.

Fig. 1: Swelling in lower lip

The intraoral examination showed that the patient was undergoing a transitional period of mixed dentition. The swelling was soft, oval, sessile, and painless, which was fluctuating in size seen on the inner aspect of the lower lip at the left central incisor and lateral incisor region, measuring 5 mm in diameter. The swelling was just below the vermilion border of the lower lip and extending inferiorly toward the vestibule. The color of the swelling was the same as that of the adjacent mucosa (Fig. 6). Additionally, intraoral examination revealed dental caries with respect to 75, 85, 36, and 46.

After clinical examination, the lesion was provisionally diagnosed as a mucocele. The blood investigations were carried out. The bleeding time and clotting time were normal. Excisional biopsy was performed in a manner similar to that reported in Case 1 (Figs 7 and 8). The wound was approximated with 3-0 silk sutures. The postoperative course was uneventful (Figs 9 and 10). The excised tissue was immediately fixed in 10% formalin and sent for histopathological examination.

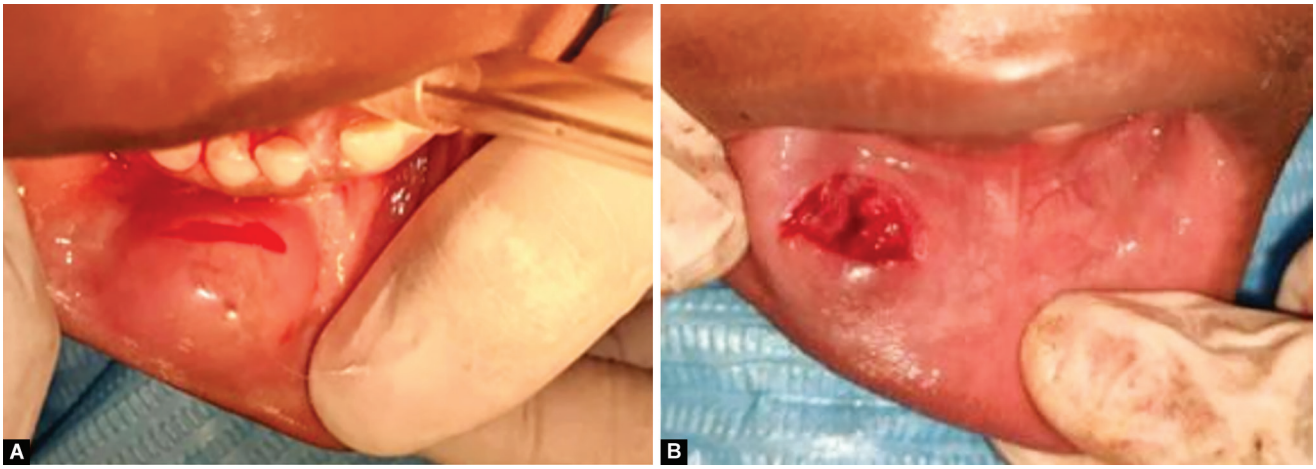
Histological Report

Microscopic examination revealed sections of cystic space surrounded by granulation tissue and chronic inflammatory infiltrate comprising of lymphocytes and plasma cells. The adjacent minor salivary gland component is seen. The overlying stratified squamous epithelium is parakeratotic. The histologic diagnosis confirmed the initial diagnosis of mucocele (extravasation type) (Fig. 11).

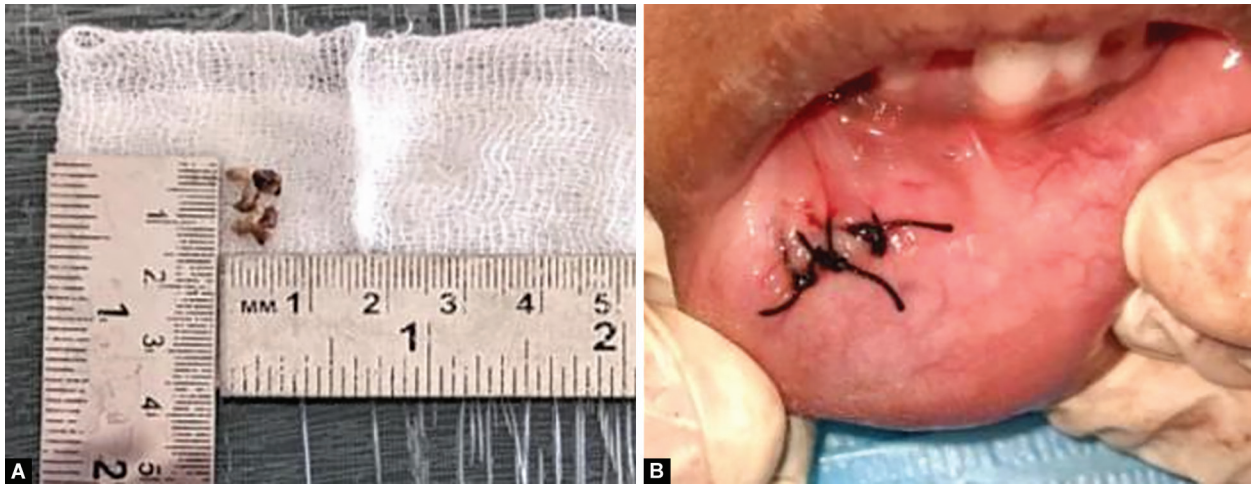
Discussion

Mucocele is a reactive lesion and occurs due to trauma or obstruction of salivary gland ducts. The diameter may vary from a few millimeters to centimeters. Mucocele is called as pseudocysts due to the accumulation of pooled mucus. The incidence of mucoceles is 0.4–0.8%, with no differences found between genders in the general population. The lower lip is found to be the most frequently affected site (40–80%), followed by the cheek mucosa and floor of the mouth.[8] The prevalence of oral mucocele among children was 64%, and affecting the lower lip was 34.5%.[9]

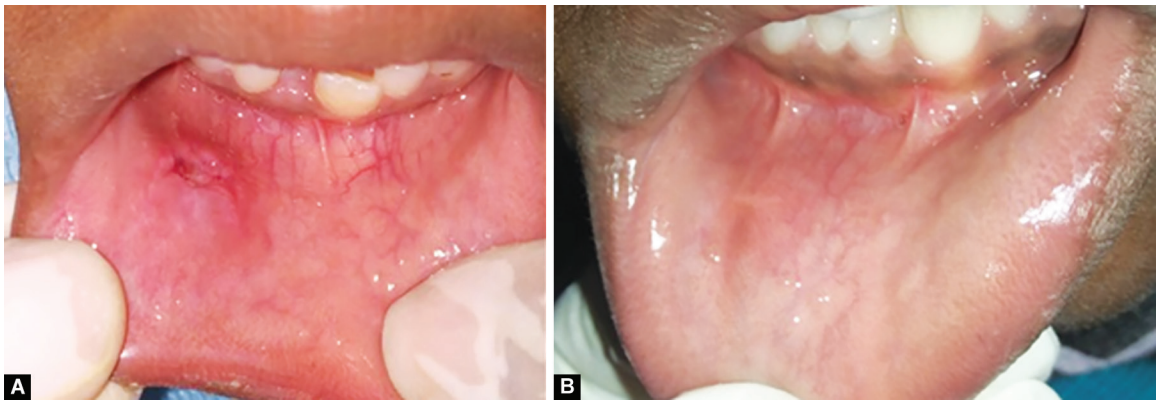
The leakage of fluid from the ducts or acini into the surrounding tissue is referred to as extravasation (extra, outside;



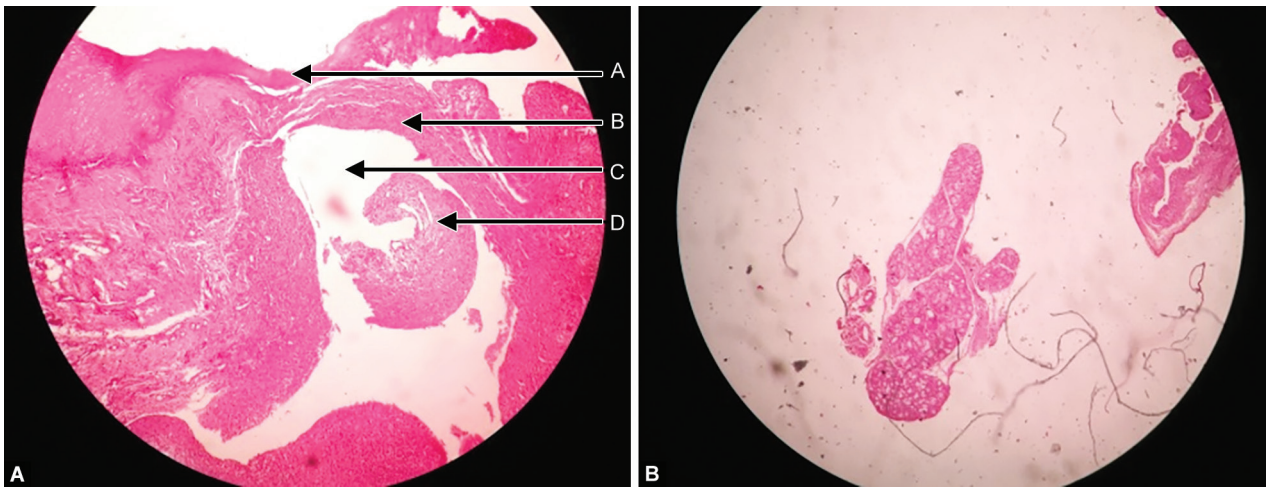
Figs 2A and B: (A) Elliptical incision; (B) Surgical excision of the lesion



Figs 3A and B: (A) Excised lesion; (B) Closure of wound after excision



Figs 4A and B: (A) Suture removal after a week; (B) Two months follow-up



Figs 5A and B: (A) Hematoxylin and eosin section (H and E, ×10); (B) Minor salivary gland; A–Atrophic parakeratotic squamous epithelium, B–Granulation tissue, C–Mucin spillage, D–Granulation tissue with inflammatory cells

vasa, vessel), while the retention type of lesion results from obstruction of the duct of a minor or accessory salivary.[2,4] The extravasation mucoceles undergo three evolutionary phases. In the first phase, there is a spillage of mucus from the excretory duct into the connective tissues. In the second phase/resorption phase, which occurs due to foreign body reactions, the formation of granuloma is seen. In the third phase, a pseudocapsule (without epithelial lining) around the mucosa is formed.[6]

Mucocele can arise within a few days after minor trauma and remains unchanged for months, unless it is treated. If left untreated, the size of swelling may decrease and increase based on rupture and consequent mucin production.[10]

Fig. 6: Swelling in lower lip

Fig. 7: Elliptical incision

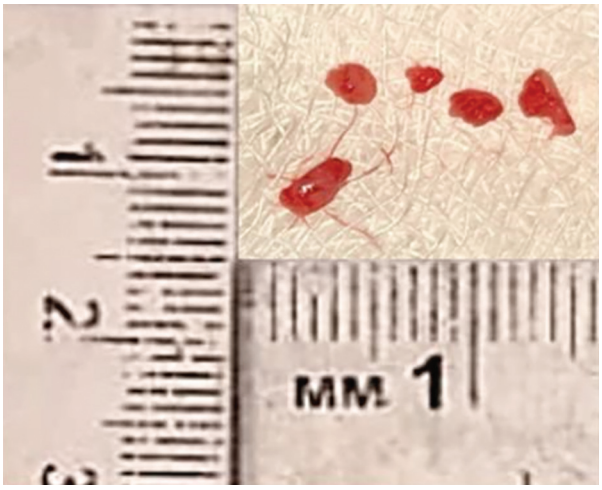


Fig. 8: Excised lesion

Treatment options include surgical excision, marsupialization, laser ablation, electrocautery, cryosurgery, intralesional steroid injections, and irradiation. Steroid injections and cryosurgery procedures are used less frequently due to their high recurrence rate, hence the conventional surgical procedure is preferred.[11] Micromarsupialization, which is simple and with good results, can be used as a treatment option among the pediatric population, but this technique has recurrence rate of 14%.[12]

Fig. 9: Closure of wound using sutures

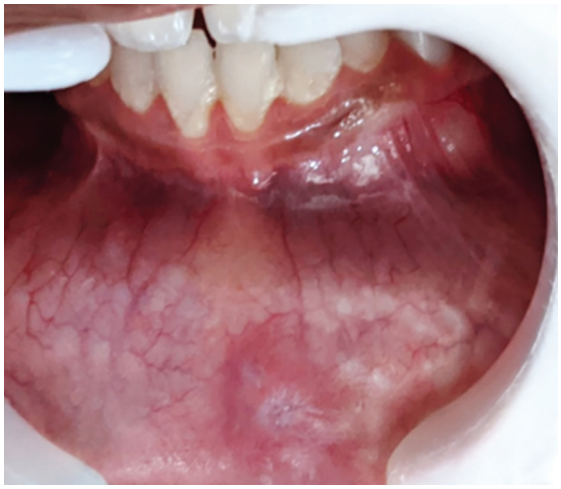
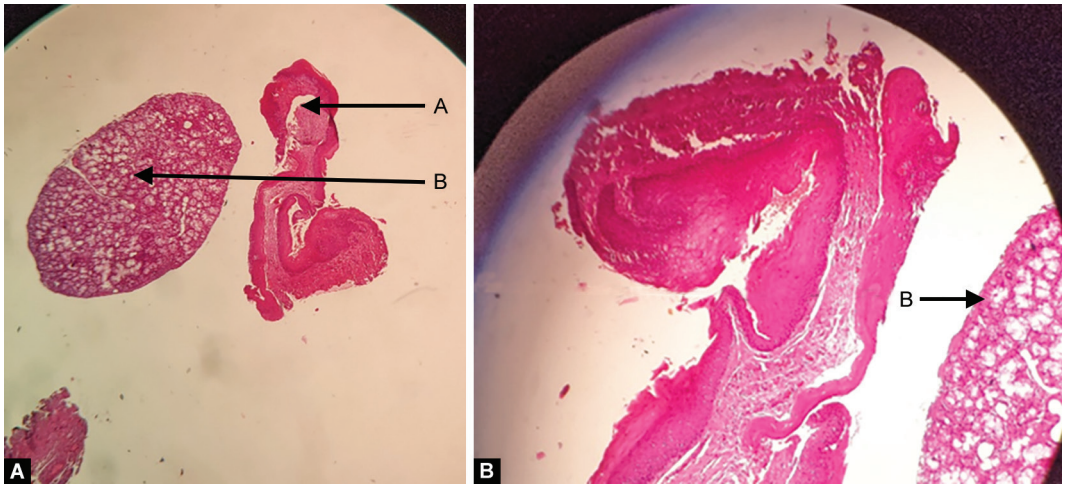


Fig. 10: Suture removal and healing after 1 week

Conventional surgical removal is the most common method that does not require extensive equipment and is economical. Elliptical incision is the most commonly used treatment procedure as it decreases the extent of loss of mucosal tissue, decreases the formation of scars, and helps to prevent spilling of the cystic content, due to which high rate of recurrence is seen.[13]

The extravasation type of mucocele consists of a circumscribed cavity in the connective tissue and submucosa, producing an obvious elevation of the mucosa with thinning of the epithelium as though it were stretched. The cavity itself is not lined by the epithelium and is, therefore, not a true cyst. Instead, its wall is made up of a lining of compressed fibrous connective tissue and fibroblasts. Cells seen are polymorphonuclear leukocytes, lymphocytes, and plasma cells. Occasional histological site reveals an intact, flattened epithelial lining. This epithelium-lined mucocele represents a lesion of the retention type.

During surgical excision, all the minor salivary gland tissues in the surgical field may be electively excised to avoid iatrogenic recurrence of a mucocele by residual salivary gland tissue left behind.[3] Hence, the limit of the lesion is of foremost importance in order to make the surgical excision complete and easier. In the present case, an unexpected rupture of the lesion had occurred



Figs 11A and B: Hematoxylin and eosin section (H and E, ×10). (A) Mucin spillage; (B) Minor salivary gland

during surgical exploration of the mucocele and made the surgical exploration difficult.

The salivary gland, acini that lie adjacent to the area of the mucocele and are associated with the involved duct, often shows alterations.[13] Management of mucocele is challenging because of high chances of recurrence. Hence, recurrence can be reduced by eliminating the adjacent surrounding glandular acini and removing the lesion down to the muscle layer, care should be taken not to injure the adjacent glands and ducts while placing sutures that can result in reappearance.[14]

Conclusion

Mucoceles are common, self-limiting benign lesions resulting from trauma. Among the various procedures, conventional surgical excision was found to be a simple, rapid, and cost-effective procedure for treating mucocele in children. Surgical removal was considered as a treatment option for the present cases as swelling was associated with functional problems and poor dietary intake.

Declaration of Patient Consent

The authors certify that they have obtained all appropriate patient-consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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